

United States Environmental Protection Agency  
National Advisory Council for Environmental Policy and Technology

**Effluent Guidelines Task Force**  
**Workgroup 1 - Issue Paper**  
**Design of Preliminary Studies**

**Report and Recommendations of the Effluent Guidelines Task Force**

Washington, DC  
September 1996

## **EGTF Workgroup 1 - Issue Paper Design of Preliminary Studies**

The Workgroup was charged with the task of developing recommendations for designing and implementing preliminary studies as part of the effluent guideline development process. The Workgroup began with information suggesting that the resource allocations to this important initiatory step were insufficient. Our goal was to balance the need for increased resources and stakeholder input with the Task Force's primary objective of effective, timely implementation of appropriate guidelines.

Preliminary studies, which are the second step in the guideline development process, are intended to provide information which can be used to determine whether industrial categories are candidates for full effluent guideline development. Studies are conducted for categories with existing guidelines and categories without guidelines. Studies are intended to be of short duration (e.g., approximately two years<sup>1</sup>) and not heavily resource intensive.

As noted in the 1992 Proposed Biennial Effluent Guidelines Plan<sup>2</sup>, the purpose of a preliminary study is to indicate whether and to what extent an industry discharges toxic and nonconventional pollutants, and to provide a basis for comparison with other industries for purposes of assigning priorities for regulation. The Workgroup believes that the end product of a high quality study provides better efficiency and better tools for selecting or eliminating categories for rulemaking. It is anticipated at the onset of this process that preliminary studies will be done for many industries and not all of them will result in final regulations.

The results of a preliminary study are published in a "Preliminary Data Summary", which presents a synopsis of recent technical, environmental and economic information. The Preliminary Data Summary is not directly used as a basis for rulemaking, but can be expanded to become a guidance document as part of a rulemaking project.

The 1992 Proposed Biennial Effluent Guidelines Plan lists a number of general data categories for which information is collected for preliminary studies. **The Workgroup reviewed these categories and recommends that EPA collect the following kinds of information that focusses on the need to collect data on environmental impacts.**

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<sup>1</sup> Section 3.(a) of the 1992 Consent Decree (see Natural Resources Defense Council et al v. Reilly, D.D.C. No. 89-2980) establishes a schedule for EPA to conduct studies for 11 point source categories. The schedule shows that the studies are to be completed within two years of the date of commencement.

<sup>2</sup> See *Federal Register*, Vol. 57, No. 89, Thursday, May 7, 1992, pages 19748-19757.

- ▶ The products manufactured and/or services provided by an industry.
- ▶ The number, types, and geographic location of facilities.
- ▶ The destination of discharges.
- ▶ The characteristics and environmental impacts of the wastewater discharges.
- ▶ The sampling and analytical methods available to ascertain the presence and concentration of wastewater constituents.
- ▶ The pollution prevention and control technologies in use and potentially available.
- ▶ Cross-media impacts associated with wastewater treatment in the industry.
- ▶ The cost of pollution prevention and control technologies in use, and the cost for additional controls.
- ▶ The cost-effectiveness of pollutant reduction, both toxic and conventional.
- ▶ Estimates of receiving water quality impacts of wastewater and POTW discharges.<sup>3</sup>
- ▶ Economic assessments including the current financial condition of the industry, expansion or reduction trends, size characterization, impact of estimated treatment costs, etc.

Each proposed plan has an associated public comment period. Comments received on the 1992 plan questioned the need for conducting preliminary studies of three existing guidelines either because the industry did not discharge toxic or conventional pollutants, or because existing guidelines were adequate. No comments were provided on which categories of industry to study, or what issues or information should be evaluated as part of a study.

With this background, the Workgroup reviewed a number of ongoing studies including the Petroleum Refining Study, the Textile Study and the Inorganic Chemicals Study, and focussed on developing recommendations pertaining to study design, use of resources, use of data, and

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<sup>3</sup>This includes sediment impacts and water column impacts.

additional information needs. This was done in the context that recommendations should help expedite and improve the overall guideline development process.

**1. Study Design and Implementation.**

- A. We recommend that in cases where the industry and its issues are documented, EPA should proceed directly to rulemaking rather than conducting an intermediary preliminary study.** This action should only be taken in cases where there is a preponderance of already assimilated information indicating full rulemaking is appropriate; or in cases where there is unequivocal feedback from stakeholders that effluent guidelines are needed. To make this determination, EPA should hold public meetings to obtain stakeholder input. Other avenues for obtaining input should include surveys of stakeholders to determine if existing rules should be revised or not. In the case of new guidelines, stakeholders could be surveyed to determine if rules were needed or relevant. Eliminating preliminary studies in these cases would provide for considerable savings of time and resources.

EPA has typically solicited stakeholder input for studies, albeit on an informal basis. We believe this process should be formalized as part of a study design (see Recommendation 2B). Input on the need for conducting studies should be solicited after an industrial category is selected for a study. It should be noted that even with adequate staffing to conduct studies, it might be necessary to extend the two-year average study time frame to accommodate stakeholder input. We believe this flexibility is important to produce a high quality study and to facilitate stakeholder buy-in.

- B. We recommend, in cases where there is uncertainty about the extent of industrial discharges and comparability to other industrial categories, that a study be conducted to explore these issues. We recommend that EPA develop general guidelines which would establish several study outlines, depending on the type of industrial category being studied, which characterize study components, identify where resources should be directed in terms of exploring key issues or study factors, and build in formal procedures for stakeholder input and peer review.** At the commencement of the study, the study plan should be sanctioned by the Directors of the Engineering and Analysis Division and the Office of Science and Technology. We also recommend that the guidelines be reviewed after each study to explore the lessons learned and to make modifications as appropriate. The purpose of conducting preliminary studies was reviewed in the context of how this differed from the selection of industrial categories for preliminary studies. The Task Force has already made a number of recommendations pertaining to criteria and information to be used in the

selection of industries for preliminary studies<sup>4</sup>. We believe that a preliminary study is a feasibility study, conducted prior to a full-fledged rulemaking effort in order to verify or assemble information supplemental to the selection process, and to provide a basis for comparison with other industrial categories.

Moreover, the development of Preliminary Study Design Guidelines will promote continuity, consistency and quality in the design and implementation of studies, and will help expedite the execution of studies. Because industrial categories can vary significantly in terms of complexity or diversity, the Workgroup believes that the study guidelines will vary depending on the category of industry being studied. For example, a study focussing on a broad industrial category with multiple subcategories may have a different design than a small category with little diversity. The guidelines could also address such issues as how to deal with situations in which the pollutant loadings in industrial wastewater for a particular category may differ depending on the data base used for calculating the loadings; or how to deal with estimating treatability of specific pollutants when they are present at trace levels.

- C. We recommend that studies be designed to have phases with interim checkpoints built in, which would allow for EPA to make determinations as to whether to proceed to rulemaking, to stop the study and not proceed to rulemaking, to conduct a full two-year study, or to continue a study.** As part of a rulemaking project, briefings are held on a quarterly basis with EPA management to discuss progress and direction. A similar approach could be adopted for preliminary studies, with checkpoints established to assess study longevity. The use of checkpoints would allow for some studies to be concluded in a time period significantly less than two years in duration, while in other cases, the studies could proceed through all phases and perhaps need to be continued. Part of the initial phase of a study could consist of an assessment of feedback from POTWs, states and industry on the industry being studied. For existing guidelines, the feedback could address such issues as how effective the guidelines are, what changes are needed, and what other subcategories or pollutants should be regulated.

One example of this approach would be a study, which during the first few months of work has collected some initial information from stakeholder surveys (see Recommendation 1.D), that indicates there is a large number of facilities discharging significant amounts of pollutants. In this case, a decision could be made to discontinue the preliminary study and proceed to full rulemaking. In a similar vein, a study in progress could be terminated in situations where changing/current information from another rulemaking process or study results in a change in priorities. One example is

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<sup>4</sup> See The Effluent Guidelines Program: Selection Criteria for Preliminary Industry Studies, Report and Recommendations of the Effluent Guidelines Task Force. July 1994.

the preliminary study for the Metal Finishing Point Source Category<sup>5</sup> which was discontinued because of overlaps with the ongoing Metal Products and Machinery rule, and the information produced as part of that rulemaking effort.

In some cases, it may be appropriate to extend study such as is currently being done for the Petroleum Refining Study. In this case, the Benzene National Emission Standard for Hazardous Air Pollutants (NESHAP) and gasoline reformulation regulations have had a significant impact on cost information, and more time is needed for assessment.

- D. We recommend that studies include stakeholder involvement through the collection of information on dischargers not accessible through the Permit Compliance System (PCS) and other national data base management systems, and that stakeholder surveys be conducted at the beginning of a study. It is recognized that the existing national data bases are not sufficient, and that information which can be obtained from stakeholders, professional or trade associations, professional societies, universities and the literature should be used to augment data collection. In many cases, the reliance on existing data management systems does not provide a complete picture of an industrial category. One example is the textile industry, which is presently the subject of an ongoing preliminary study. Textile mills are not currently subject to categorical pretreatment standards. Eighty to ninety percent of these facilities are indirect dischargers. Unfortunately, EPA cannot access information on indirect dischargers, despite the fact that this information is essential to any determination of how they impact POTWs, which in turn impacts EPA's determination of which categories most-require preparation of new or revised guidelines. There are similar information limitations for direct dischargers, many of which are not included as part of the PCS data management system<sup>6</sup>.**

One means of collecting information would be to work with available resources, such as the Association of Metropolitan Sewerage Agencies (AMSA), EPA Regions, States and the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA) to collect existing information on direct and indirect dischargers for preliminary studies. These sources have extensive information available which is accessible, and can also provide expertise in addressing questions that arise as the data are reviewed. AMSA has already participated in information collection efforts for three rulemaking projects (Industrial Laundries, Transportation Cleaning Equipment and Textile categories). Based on these projects, it was observed that the applicability

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<sup>5</sup> See 40 CFR 433.

<sup>6</sup> Industries with flows < 25,000 gallons per day, including categorical industries, are not included in PCS.

of the data collected in developing a national profile for an industrial category was dependent on the complexity of the industrial category, and hence should be considered in designing future surveys. In addition, the Water Environment Federation's Industrial Waste Committee has formed a subgroup for purpose of assisting EPA in reviewing draft documents, and in providing treatment cost information on an industry-wide basis to the extent possible.

EPA has typically solicited stakeholder input for studies, albeit on an informal basis. We believe this process should be formalized as part of a study design (see Recommendation 1.B). It should be noted that even with adequate staffing to conduct studies, it might be necessary to extend the two-year average study time frame to accommodate stakeholder input. We believe this flexibility is important to produce a high quality study and to facilitate stakeholder buy-in.

- E. We recommend that studies include stakeholder involvement by incorporating peer review as part of the implementation of preliminary studies, and that resources be allocated to facilitate this process.** One key lesson learned in the development of the Pulp and Paper rule has been that the public-review process has been helpful in keeping the project moving and on target, obtaining industry buy-in, and recognizing that a common goal should be to come to agreement on the facts. This same philosophy should be applied to a peer-review process for preliminary studies. In addition, during the rulemaking process, many industries have questions or uncertainties about why regulations are needed. This is due, to some extent, to their lack of involvement or awareness of the preliminary study or the issues it addressed. We believe that fostering industry involvement in preliminary studies will help to eliminate these types of uncertainties.

Peer review options could include the use of professional voluntary associations, such as the Water Environment Federation and the Academy of Environmental Engineers, the development of a formal technical advisory committee, the scheduling of public meetings during the course of the study, publishing tentative findings in the *Federal Register* or soliciting comments and feedback on the draft study report. Peer review could also be valuable as part of the decision-making process and furthering stakeholder buy-in. We believe that this process will expedite guideline development inasmuch as the stakeholders may be more receptive and less inclined to pursue litigation if there is buy-in in the rulemaking process.

However, for this process to work, additional steps must be incorporated into a study's project management structure, which in turn will require allocation of EPA resources to accomplish. It should also be recognized that even with adequate staffing to conduct studies, it might be necessary to extend the two-year average study time frame to accommodate peer review. We believe this flexibility is important to produce a high quality study and to facilitate stakeholder buy-in.

## 2. Use of Resources.

- A. **We recommend that EPA utilize a team or workgroup approach in conducting preliminary studies, similar to the approach used for rulemaking projects.** This approach would enable development of teams that are effective and efficient at implementing preliminary studies as well as providing opportunities for cross training. There could also be some level of carry-over of the preliminary study team through the proposal stage of a rulemaking project, thereby providing continuity and best use of expertise.

Within EPA, these workgroups could involve staff working on other studies or individuals who worked on prior rulemaking efforts. Other EPA program offices could be included in a workgroup as a means of soliciting input on multi-media considerations; however, for this participation to be effective, a number of barriers would have to be eliminated including differences in how other program offices classify industries (e.g., by process rather than category), and program resources and commitment. EPA needs to place a high priority on facilitating the involvement of other program offices during preliminary studies as part of the overall effort to promote cross-media regulatory development.

The workgroup could also include representatives from the Office of Research and Development (ORD). ORD's current role typically occurs at the end of the rulemaking process by filling in gaps of information. However, ORD assistance could be utilized as part of preliminary study implementation by bringing in academic and environmental input/knowledge, and by utilizing existing staff who participated in original rulemaking projects. ORD could also help perform literature reviews, and act as a liaison with trade associations and other sources for obtaining information about pretreatment technology and pollution prevention. This effort could be enhanced by ORD's participation, since ORD is a non-regulatory arm of EPA, and therefore, may be a less threatening liaison with industry for joint information sharing or research efforts.

The workgroup should be encouraged to utilize industrial experts from EPA regions or other governmental agencies. This has been done for several rulemaking efforts, such as Pulp and Paper rule, and has been very productive. The Task Force has

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<sup>7</sup> See The Effluent Guidelines Program: Selection Criteria for Preliminary Industry Studies, Report and Recommendations of the Effluent Guidelines Task Force. Recommendation 4.2. July 1994.

already recommended that EPA regional contacts be established to simplify the collection and dissemination of information and feedback between EPA regions and Headquarters<sup>7</sup>. The contact could also be used to help identify regional staff members with industrial expertise for participation in preliminary studies.

The workgroups could also include representatives from POTWs or states provided that these individuals do not represent professional associations. Under this scenario, the Federal Advisory Committee Act (FACA) would not apply since these representatives are co-regulators with EPA in implementing and enforcing effluent guidelines. The applicability of the FACA is significant in that it would require EPA to notice and hold public meetings each time a workgroup convened. This was perceived to be a barrier which would significantly slow down a study.

**B. We recommend that resources be made available to EPA for securing the appropriate number of qualified full-time equivalents to perform preliminary studies, and that the use of contractual services be determined on a case-by-case basis.** Commitment of appropriate resources is a common issue for all stages of the effluent guidelines development process, including preliminary studies. Inasmuch as the quality of the study is affected by the resources committed to the study, it would be prudent to apply the appropriate level of resources to a project that can have a significant economic impact once implemented (e.g., either on EPA's part by moving to developing a rule; on the stakeholders' part by promulgation of new or revised regulations). We believe that the conducting and completing preliminary studies is greatly hampered by the limited resources allocated to these efforts in terms of staff and contractual support. In most cases, only one staff member works on the project and then on a part-time basis only. In addition, due to limited manning, the assigned staff member may frequently be pulled off the study entirely to complete projects which may have shifted in priority. This situation is exacerbated by not having the resources to provide contractor support. It is believed that the best way to resolve these problems is to provide adequate in-house resources to get the studies done. The primary advantage of having the work done in-house versus using a contractor is that it develops EPA expertise rather than the expertise of the contractor. In addition, the use of a contractor still consumes EPA resources for contract management and evaluation. However, there may be specific elements of a preliminary study that are best suited for contractual services, particularly support functions such as data manipulation and data base management, and funding should be allocated to support the use of contractual services as needed.

### **3. Use of Data.**

**A. We recommend that EPA be provided access to information sources and resources to collect information for conducting preliminary studies, and that EPA use all available sources of information for decisions stemming from preliminary studies.**

As part of our discussions pertaining to ongoing preliminary studies, it is apparent that access to good information and the variability of different data bases are issues of significance. As noted in Recommendation 1.D, the reliance on existing data management systems does not provide a complete picture of an industrial category. Moreover, there are situations in which the variability in information provided by different data bases makes evaluation difficult.

The near-term solution to these issues is to ensure that EPA has access to a wide range of good information, and that all data sources are used for decision making. The Task Force has already recommended that EPA work with AMSA, other POTW representatives, and states to collect existing information on direct and indirect dischargers for the guideline development process; that EPA seek out and contact trade associations in order to provide such groups with the opportunity to contribute available data; and that EPA direct pretreatment approval authorities (authorized states and EPA regions) and NPDES authorized states to provide summary sheets to the EPA Office of Water for all direct and indirect dischargers under each approval authority's jurisdiction<sup>8</sup>. These recommendations are also germane to the implementation of preliminary studies in order to ensure that EPA has the best information available on which to evaluate the need to develop effluent guidelines.

In addition, it is apparent from ongoing studies that there are other sources of information which EPA should be able to easily access which not only provide valuable data, but also information on cross-media impacts. One example is access to information collected by other EPA programs' rulemaking efforts. In the case of the Petroleum Refining Study, information collected as part of the Hazardous Organics NESHAP<sup>9</sup> (HON) was extremely useful because facilities that had to comply with the air requirements typically had more advanced control technologies to study. Another example is access to data for facilities with water-quality-based permit limits thereby allowing EPA to obtain more information on control technologies that have been put in place to meet requirements. EPA should be provided with the resources to undertake these kinds of information collection efforts.

- B. We recommend that EPA be provided with the resources to undertake facility, receiving water and POTW sampling in cases where it is necessary to fill in information gaps when all available information has been evaluated, or to document facilities with unique pretreatment or pollution prevention technologies.** In many cases, there are still significant information gaps after all available information

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<sup>8</sup> See The Effluent Guidelines Program: Selection Criteria for Preliminary Industry Studies, Report and Recommendations of the Effluent Guidelines Task Force. Recommendations 3.1, 3.2 and 5.4. July 1994.

has been assessed. To fill in these gaps, EPA should be provided with the authority pursuant to Section 308 of the Clean Water Act and with resources to conduct site visits or additional sampling as needed.

#### **4. Information Needs.**

- A. We recommend that EPA be provided with the resources to develop updated chemical use trees and Industrial Process Profiles for Environmental Use (IPPEUs) for industrial categories listed in Effluent Guidelines Plans.** Chemical use trees and IPPEUs, which were prepared by ORD in the 1980s, are process profiles that delineate raw materials used and the resulting pollutants in industrial waste streams. This information, if updated and broadened to include risk assessment and multi-media aspects, would be valuable in providing process synopses for quick reference, which could be used to gain individual industry and process perspectives; to gain a basic knowledge of the processes for evaluating a full range of pollution control strategies; and to identify information that is now known, resulting in the initiation of more efficient and comprehensive characterization programs. This effort would not be trivial, and would require an ongoing commitment of resources. ORD's expertise could be utilized in preparing updates or new information.
- B. We recommend that the Office of Enforcement and Compliance, which is now responsible for maintaining the Permit Compliance System (PCS) Data Base, establish an interagency task force to ensure that all EPA program offices, including the Engineering and Analysis Division, are involved in managing and modifying PCS.** As part of the recent EPA reorganization to form an Office of Enforcement and Compliance (OEC), PCS has been moved from OWM<sup>10</sup> to OEC. The Task Force has already recommended that EPA begin a concerted effort to modify PCS so that the information contained in the system and the format of the information can be used for more than one purpose, and that all stakeholders that need to utilize the system, including EPA Headquarters and regions, and authorized states, be involved in a comprehensive modification of PCS<sup>11</sup>. The basis for the Task Force's recommendation was that the PCS data management system could be used as a valuable resource for multiple agency functions such as development of effluent guidelines, but that its general applicability and utility have been hampered by a lack of coordination between EPA offices and lack of funding. This was viewed as an important issue inasmuch as the Enforcement, Engineering and Analysis, and Permits Divisions need to

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<sup>10</sup> Formerly the Office of Wastewater Enforcement and Compliance.

<sup>11</sup> See The Effluent Guidelines Program: Selection Criteria for Preliminary Industry Studies, Report and Recommendations of the Effluent Guidelines Task Force. Recommendation 5.1. July 1994.

share and use similar data, and the systems should be set up to accommodate those needs. However, in light of the reorganization and the decision to move PCS to OEC, it is very likely that this arrangement will only exacerbate problems with the utility and accessibility of PCS for the Engineering and Analysis Division, as well as other offices and divisions.

- C. **We recommend that EPA or other appropriate entities aggregate all of the data on pollution prevention research (e.g., EPA data, stakeholder data, etc.) into one data base which is accessible to everyone, or maintain a listing of information that is accessible.** This information is presently fragmented and difficult to access, yet would be invaluable to the effluent guidelines effort. Some of these potential EPA sources include the Design for the Environment, the Sustainable Development Program and Green Sectors, and the Common Sense Initiative. This integration effort would be substantial, and would require an ongoing commitment of resources for development and maintenance.